



## SEQUENCE LISTING

<110> AEROVANCE, INC.  
PAN, Clark  
ROCZNIAK, Steve  
GREVE, Jeffrey Michael  
YUNG, Stephanie L.  
LONGPHRE, Malinda  
WONG, Teresa Mo-fun  
TOMKINSON, Adrian

<120> MODIFIED IL-4 MUTEIN RECEPTOR ANTAGONISTS

<130> AERO1210-2

<140> US 10/820,559  
<141> 2004-04-08

<150> US 60/530,182  
<151> 2003-12-17

<150> US 60/528,228  
<151> 2003-12-09

<150> US 60/498,906  
<151> 2003-08-29

<160> 30

<170> PatentIn version 3.3

<210> 1  
<211> 396  
<212> DNA  
<213> Artificial sequence

<220>  
<223> Modified human sequence

<400> 1  
atgcacaaatg gcgtatcac cttacaggag atcatcaaaaa ctttgaacag cctcacagag 60  
cagaagactc tgtgcaccga gttgaccgta acagacatct ttgctgcctc caagaacaca 120  
actgagaagg aaacaccttg cagggctgctg actgtgctcc ggcagttcta cagccaccat 180  
gagaaggaca ctcgctgcct gggtgcgact gcacagcagt tccacaggca caagcagctg 240  
atccgattcc tgaaacggct cgacaggaac ctctggggcc tggcgggctt gaattcctgt 300  
cctgtgaagg aagccaacca gagtacgtt gaaaacttct tggaaaggct aaagacgatc 360  
atggacgaga aagactcaaa gtgtcgagc taataa 396

<210> 2  
<211> 396  
<212> DNA  
<213> Artificial sequence

<220>

<223> Modified human sequence

<400>	2					
atgcacaagt	gcgatatacac	cttacaggag	atcatcaaaa	ctttgaacag	cctcacagag	60
cagaagactc	tgtgcaccga	gttgtgcgta	acagacatct	ttgctgcctc	caagaacaca	120
actgagaagg	aaaccttctg	cagggctgcg	actgtgctcc	ggcagttcta	cagccaccat	180
gagaaggaca	ctcgctgcct	gggtgcgact	gcacagcagt	tccacaggca	caagcagctg	240
atccgattcc	tgaaacggct	cgacaggaac	ctctggggcc	tggcgggctt	gaattcctgt	300
cctgtgaagg	aagccaacca	gagtacgttg	gaaaacttct	tggaaaggct	aaagacgatc	360
atggacgaga	aagactcaaa	gtgtcgagc	taataa			396

<210> 3

<211> 396

<212> DNA

<213> Artificial sequence

<220>

<223> Modified human sequence

<400>	3					
atgcacaagt	gcgatatacac	cttacaggag	atcatcaaaa	ctttgaacag	cctcacagag	60
cagaagactc	tgtgcaccga	gttgaccgta	acagacatct	ttgctgcctg	caagaacaca	120
actgagaagg	aaaccttctg	cagggctgcg	actgtgctcc	ggcagttcta	cagccaccat	180
gagaaggaca	ctcgctgcct	gggtgcgact	gcacagcagt	tccacaggca	caagcagctg	240
atccgattcc	tgaaacggct	cgacaggaac	ctctggggcc	tggcgggctt	gaattcctgt	300
cctgtgaagg	aagccaacca	gagtacgttg	gaaaacttct	tggaaaggct	aaagacgatc	360
atggacgaga	aagactcaaa	gtgtcgagc	taataa			396

<210> 4

<211> 396

<212> DNA

<213> Artificial sequence

<220>

<223> Modified human sequence

<400>	4					
atgcacaagt	gcgatatacac	cttacaggag	atcatcaaaa	ctttgaacag	cctcacagag	60
cagaagactc	tgtgcaccga	gttgaccgta	acagacatct	ttgctgcctc	ctgcaacaca	120
actgagaagg	aaaccttctg	cagggctgcg	actgtgctcc	ggcagttcta	cagccaccat	180
gagaaggaca	ctcgctgcct	gggtgcgact	gcacagcagt	tccacaggca	caagcagctg	240
atccgattcc	tgaaacggct	cgacaggaac	ctctggggcc	tggcgggctt	gaattcctgt	300

cctgtgaagg aagccaaacca gagtacgttg gaaaacttct tggaaaggct aaagacgatc	360
atggacgaga aagactcaaa gtgttcgagc taataa	396

<210> 5  
<211> 396  
<212> DNA  
<213> Artificial sequence

<220>  
<223> Modified human sequence

<400> 5	
atgcacaagt gcgatatacac cttacaggag atcatcaaaa ctttgaacag cctcacagag	60
cagaagactc tgtgcaccga gttgaccgta acagacatct ttgctgcctc caagtgcaca	120
actgagaagg aaaccttctg cagggctgcg actgtgctcc ggcagttcta cagccaccat	180
gagaaggaca ctcgctgcct gggtgcgact gcacagcagt tccacaggca caagcagctg	240
atccgattcc tgaaacggct cgacaggaac ctctggggcc tggcgggctt gaattcctgt	300
cctgtgaagg aagccaaacca gagtacgttg gaaaacttct tggaaaggct aaagacgatc	360
atggacgaga aagactcaaa gtgttcgagc taataa	396

<210> 6  
<211> 396  
<212> DNA  
<213> Artificial sequence

<220>  
<223> Modified human sequence

<400> 6	
atgcacaagt gcgatatacac cttacaggag atcatcaaaa ctttgaacag cctcacagag	60
cagaagactc tgtgcaccga gttgaccgta acagacatct ttgctgcctc caagaacacca	120
actgagaagg aaaccttctg cagggctgcg actgtgctcc ggcagttcta cagccaccat	180
gagaaggaca ctcgctgcct gggtgcgact gcacagcagt tccacaggca caagcagctg	240
atccgattcc tgaaacggct cgacaggaac ctctggggcc tggcgggctt gaattcctgt	300
cctgtgaagg aatgcaacca gagtacgttg gaaaacttct tggaaaggct aaagacgatc	360
atggacgaga aagactcaaa gtgttcgagc taataa	396

<210> 7  
<211> 396  
<212> DNA  
<213> Artificial sequence

<220>  
<223> Modified human sequence

<400> 7  
atgcacaagt gcgatatacac cttacaggag atcatcaaaa ctttgaacag cctcacagag 60  
cagaagactc tgtgcaccga gttgaccgta acagacatct ttgctgcctc caagaacaca 120  
actgagaagg aaaccttctg cagggctgcg actgtgctcc ggcagttcta cagccaccat 180  
gagaaggaca ctcgctgcct gggtgcgact gcacagcagt tccacaggca caagcagctg 240  
atccgattcc tgaaacggct cgacaggaac ctctggggcc tggcgggctt gaattcctgt 300  
cctgtgaagg aagcctgcc a gatcgtt gaaaacttct tggaaaggct aaagacgatc 360  
atggacgaga aagactcaaa gtgtcgagc taataa 396

<210> 8  
<211> 396  
<212> DNA  
<213> Artificial sequence

<220>  
<223> Modified human sequence

<400> 8  
atgcacaagt gcgatatacac cttacaggag atcatcaaaa ctttgaacag cctcacagag 60  
cagaagactc tgtgcaccga gttgaccgta acagacatct ttgctgcctc caagaacaca 120  
actgagaagg aaaccttctg cagggctgcg actgtgctcc ggcagttcta cagccaccat 180  
gagaaggaca ctcgctgcct gggtgcgact gcacagcagt tccacaggca caagcagctg 240  
atccgattcc tgaaacggct cgacaggaac ctctggggcc tggcgggctt gaattcctgt 300  
cctgtgaagg aagccaactg cagtagttt gaaaacttct tggaaaggct aaagacgatc 360  
atggacgaga aagactcaaa gtgtcgagc taataa 396

<210> 9  
<211> 130  
<212> PRT  
<213> Artificial sequence

<220>  
<223> Modified human sequence

<400> 9

Met	His	Lys	Cys	Asp	Ile	Thr	Leu	Gln	Glu	Ile	Ile	Lys	Thr	Leu	Asn
1					5				10			15			

Ser	Leu	Thr	Glu	Gln	Lys	Thr	Leu	Cys	Thr	Glu	Leu	Thr	Val	Thr	Asp
					20			25			30				

Ile	Phe	Ala	Ala	Ser	Lys	Asn	Thr	Thr	Glu	Lys	Glu	Thr	Phe	Cys	Arg
				35			40			45					

Ala Ala Thr Val Leu Arg Gln Phe Tyr Ser His His Glu Lys Asp Thr  
50 55 60

Arg Cys Leu Gly Ala Thr Ala Gln Gln Phe His Arg His Lys Gln Leu  
65 70 75 80

Ile Arg Phe Leu Lys Arg Leu Asp Arg Asn Leu Trp Gly Leu Ala Gly  
85 90 95

Leu Asn Ser Cys Pro Val Lys Glu Ala Asn Gln Ser Thr Leu Glu Asn  
100 105 110

Phe Leu Glu Arg Leu Lys Thr Ile Met Asp Glu Lys Asp Ser Lys Cys  
115 120 125

Ser Ser  
130

<210> 10  
<211> 130  
<212> PRT  
<213> Artificial sequence

<220>  
<223> Modified human sequence

<400> 10

Met His Lys Cys Asp Ile Thr Leu Gln Glu Ile Ile Lys Thr Leu Asn  
1 5 10 15

Ser Leu Thr Glu Gln Lys Thr Leu Cys Thr Glu Leu Cys Val Thr Asp  
20 25 30

Ile Phe Ala Ala Ser Lys Asn Thr Thr Glu Lys Glu Thr Phe Cys Arg  
35 40 45

Ala Ala Thr Val Leu Arg Gln Phe Tyr Ser His His Glu Lys Asp Thr  
50 55 60

Arg Cys Leu Gly Ala Thr Ala Gln Gln Phe His Arg His Lys Gln Leu  
65 70 75 80

Ile Arg Phe Leu Lys Arg Leu Asp Arg Asn Leu Trp Gly Leu Ala Gly  
85 90 95

Leu Asn Ser Cys Pro Val Lys Glu Ala Asn Gln Ser Thr Leu Glu Asn  
100 105 110

Phe Leu Glu Arg Leu Lys Thr Ile Met Asp Glu Lys Asp Ser Lys Cys  
 115                            120                            125

Ser Ser  
 130

<210> 11  
 <211> 130  
 <212> PRT  
 <213> Artificial sequence

<220>  
 <223> Modified human sequence

<400> 11

Met His Lys Cys Asp Ile Thr Leu Gln Glu Ile Ile Lys Thr Leu Asn  
 1                            5                                10                            15

Ser Leu Thr Glu Gln Lys Thr Leu Cys Thr Glu Leu Thr Val Thr Asp  
 20                            25                                30

Ile Phe Ala Ala Cys Lys Asn Thr Thr Glu Lys Glu Thr Phe Cys Arg  
 35                            40                                45

Ala Ala Thr Val Leu Arg Gln Phe Tyr Ser His His Glu Lys Asp Thr  
 50                            55                                60

Arg Cys Leu Gly Ala Thr Ala Gln Gln Phe His Arg His Lys Gln Leu  
 65                            70                                75                            80

Ile Arg Phe Leu Lys Arg Leu Asp Arg Asn Leu Trp Gly Leu Ala Gly  
 85                            90                                95

Leu Asn Ser Cys Pro Val Lys Glu Ala Asn Gln Ser Thr Leu Glu Asn  
 100                            105                              110

Phe Leu Glu Arg Leu Lys Thr Ile Met Asp Glu Lys Asp Ser Lys Cys  
 115                            120                            125

Ser Ser  
 130

<210> 12  
 <211> 130  
 <212> PRT  
 <213> Artificial sequence

&lt;220&gt;

&lt;223&gt; Modified human sequence

&lt;400&gt; 12

Met His Lys Cys Asp Ile Thr Leu Gln Glu Ile Ile Lys Thr Leu Asn		
1	5	10
		15

Ser Leu Thr Glu Gln Lys Thr Leu Cys Thr Glu Leu Thr Val Thr Asp		
20	25	30

Ile Phe Ala Ala Ser Cys Asn Thr Thr Glu Lys Glu Thr Phe Cys Arg		
35	40	45

Ala Ala Thr Val Leu Arg Gln Phe Tyr Ser His His Glu Lys Asp Thr		
50	55	60

Arg Cys Leu Gly Ala Thr Ala Gln Gln Phe His Arg His Lys Gln Leu		
65	70	75
		80

Ile Arg Phe Leu Lys Arg Leu Asp Arg Asn Leu Trp Gly Leu Ala Gly		
85	90	95

Leu Asn Ser Cys Pro Val Lys Glu Ala Asn Gln Ser Thr Leu Glu Asn		
100	105	110

Phe Leu Glu Arg Leu Lys Thr Ile Met Asp Glu Lys Asp Ser Lys Cys		
115	120	125

Ser Ser		
130		

&lt;210&gt; 13

&lt;211&gt; 130

&lt;212&gt; PRT

&lt;213&gt; Artificial sequence

&lt;220&gt;

&lt;223&gt; Modified human sequence

&lt;400&gt; 13

Met His Lys Cys Asp Ile Thr Leu Gln Glu Ile Ile Lys Thr Leu Asn		
1	5	10
		15

Ser Leu Thr Glu Gln Lys Thr Leu Cys Thr Glu Leu Thr Val Thr Asp		
20	25	30

Ile Phe Ala Ala Ser Lys Cys Thr Thr Glu Lys Glu Thr Phe Cys Arg		
35	40	45

Ala Ala Thr Val Leu Arg Gln Phe Tyr Ser His His Glu Lys Asp Thr  
50 55 60

Arg Cys Leu Gly Ala Thr Ala Gln Gln Phe His Arg His Lys Gln Leu  
65 70 75 80

Ile Arg Phe Leu Lys Arg Leu Asp Arg Asn Leu Trp Gly Leu Ala Gly  
85 90 95

Leu Asn Ser Cys Pro Val Lys Glu Ala Asn Gln Ser Thr Leu Glu Asn  
100 105 110

Phe Leu Glu Arg Leu Lys Thr Ile Met Asp Glu Lys Asp Ser Lys Cys  
115 120 125

Ser Ser  
130

<210> 14  
<211> 130  
<212> PRT  
<213> Artificial sequence

<220>  
<223> Modified human sequence

<400> 14

Met His Lys Cys Asp Ile Thr Leu Gln Glu Ile Ile Lys Thr Leu Asn  
1 5 10 15

Ser Leu Thr Glu Gln Lys Thr Leu Cys Thr Glu Leu Thr Val Thr Asp  
20 25 30

Ile Phe Ala Ala Ser Lys Asn Thr Thr Glu Lys Glu Thr Phe Cys Arg  
35 40 45

Ala Ala Thr Val Leu Arg Gln Phe Tyr Ser His His Glu Lys Asp Thr  
50 55 60

Arg Cys Leu Gly Ala Thr Ala Gln Gln Phe His Arg His Lys Gln Leu  
65 70 75 80

Ile Arg Phe Leu Lys Arg Leu Asp Arg Asn Leu Trp Gly Leu Ala Gly  
85 90 95

Leu Asn Ser Cys Pro Val Lys Glu Cys Asn Gln Ser Thr Leu Glu Asn

100 105 110

Phe Leu Glu Arg Leu Lys Thr Ile Met Asp Glu Lys Asp Ser Lys Cys  
 115 120 125

Ser Ser  
 130

<210> 15  
 <211> 130  
 <212> PRT  
 <213> Artificial sequence

<220>  
 <223> Modified human sequence

<400> 15

Met His Lys Cys Asp Ile Thr Leu Gln Glu Ile Ile Lys Thr Leu Asn  
 1 5 10 15

Ser Leu Thr Glu Gln Lys Thr Leu Cys Thr Glu Leu Thr Val Thr Asp  
 20 25 30

Ile Phe Ala Ala Ser Lys Asn Thr Thr Glu Lys Glu Thr Phe Cys Arg  
 35 40 45

Ala Ala Thr Val Leu Arg Gln Phe Tyr Ser His His Glu Lys Asp Thr  
 50 55 60

Arg Cys Leu Gly Ala Thr Ala Gln Gln Phe His Arg His Lys Gln Leu  
 65 70 75 80

Ile Arg Phe Leu Lys Arg Leu Asp Arg Asn Leu Trp Gly Leu Ala Gly  
 85 90 95

Leu Asn Ser Cys Pro Val Lys Glu Ala Cys Gln Ser Thr Leu Glu Asn  
 100 105 110

Phe Leu Glu Arg Leu Lys Thr Ile Met Asp Glu Lys Asp Ser Lys Cys  
 115 120 125

Ser Ser  
 130

<210> 16  
 <211> 130  
 <212> PRT  
 <213> Artificial sequence

&lt;220&gt;

&lt;223&gt; Modified human sequence

&lt;400&gt; 16

Met His Lys Cys Asp Ile Thr Leu Gln Glu Ile Ile Lys Thr Leu Asn		
1	5	10
		15

Ser Leu Thr Glu Gln Lys Thr Leu Cys Thr Glu Leu Thr Val Thr Asp		
20	25	30

Ile Phe Ala Ala Ser Lys Asn Thr Thr Glu Lys Glu Thr Phe Cys Arg		
35	40	45

Ala Ala Thr Val Leu Arg Gln Phe Tyr Ser His His Glu Lys Asp Thr		
50	55	60

Arg Cys Leu Gly Ala Thr Ala Gln Gln Phe His Arg His Lys Gln Leu		
65	70	75
		80

Ile Arg Phe Leu Lys Arg Leu Asp Arg Asn Leu Trp Gly Leu Ala Gly		
85	90	95

Leu Asn Ser Cys Pro Val Lys Glu Ala Asn Cys Ser Thr Leu Glu Asn		
100	105	110

Phe Leu Glu Arg Leu Lys Thr Ile Met Asp Glu Lys Asp Ser Lys Cys		
115	120	125

Ser Ser		
130		

&lt;210&gt; 17

&lt;211&gt; 42

&lt;212&gt; DNA

&lt;213&gt; Artificial sequence

&lt;220&gt;

&lt;223&gt; Amplification primer

&lt;400&gt; 17

gaagactctg tgcaccgagt tgtgcgtAAC agacatcttt gc

42

&lt;210&gt; 18

&lt;211&gt; 42

&lt;212&gt; DNA

&lt;213&gt; Artificial sequence

&lt;220&gt;

&lt;223&gt; Amplification primer

```

<400> 18
gcaaagatgt ctgttacgca caactcggtg cacagagtct tc          42

<210> 19
<211> 39
<212> DNA
<213> Artificial sequence

<220>
<223> Amplification primer

<400> 19
gtaacagaca tcttgctgc ctgcaagaac acaactgag          39

<210> 20
<211> 39
<212> DNA
<213> Artificial sequence

<220>
<223> Amplification primer

<400> 20
ctcagttgtg ttcttgagg cagcaaagat gtctgttac          39

<210> 21
<211> 45
<212> DNA
<213> Artificial sequence

<220>
<223> Amplification primer

<400> 21
ccgtaacaga catcttgct gcctcctgca acacaactga gaagg          45

<210> 22
<211> 45
<212> DNA
<213> Artificial sequence

<220>
<223> Amplification primer

<400> 22
ccttctcagt tgtgttgcag gaggcagcaa agatgtctgt tacgg          45

<210> 23
<211> 42
<212> DNA
<213> Artificial sequence

<220>
<223> Amplification primer

```

```

<400> 23
gacatcttg ctgcctccaa gtgcacaact gagaaggaaa cc          42

<210> 24
<211> 42
<212> DNA
<213> Artificial sequence

<220>
<223> Amplification primer

<400> 24
gtttccttc tcagttgtgc acttggaggc agcaaagatg tc          42

<210> 25
<211> 41
<212> DNA
<213> Artificial sequence

<220>
<223> Amplification primer

<400> 25
gaattcctgt cctgtgaagg aatgcaacca gagtacgttgc          41

<210> 26
<211> 41
<212> DNA
<213> Artificial sequence

<220>
<223> Amplification primer

<400> 26
ccaacgtact ctgggtgcat tccttcacag gacaggaatt c          41

<210> 27
<211> 39
<212> DNA
<213> Artificial sequence

<220>
<223> Amplification primer

<400> 27
cctgtgaagg aagcctgcc a gatgtacgttgc gaaaacttc          39

<210> 28
<211> 39
<212> DNA
<213> Artificial sequence

<220>
<223> Amplification primer

<400> 28

```

gaagtttcc aacgtactct ggcaggatcc ctacacagg 39

<210> 29  
<211> 44  
<212> DNA  
<213> Artificial sequence

<220>  
<223> Amplification primer

<400> 29  
cctgtcctgt gaaggaagcc aactgcagta cgttggaaaa cttc 44

<210> 30  
<211> 44  
<212> DNA  
<213> Artificial sequence

<220>  
<223> Amplification primer

<400> 30  
gaagtttcc aacgtactgc agttggatcc ctacacagga cagg 44